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=> b ca  
COST IN U.S. DOLLARS

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FULL ESTIMATED COST

=> s porcine(w)TSH(w)receptor?

32105 PORCINE

18985 TSH

531340 RECEPTOR?

L1 19 PORCINE(W)TSH(W)RECEPTOR?

=> d l1 1 all

L1 ANSWER 1 OF 19 CA COPYRIGHT 2002 ACS

AN 131:350079 CA

TI The interaction of TSH receptor autoantibodies with 125I-labelled TSH receptor

AU Sanders, Jane; Oda, Yasuo; Roberts, Sara; Kiddie, Angela; Richards, Tonya; Bolton, Jane; Mcgrath, Vivienne; Walters, Susannah; Jaskolski, Donat; Furmaniak, Jadwiga; Smith, Bernard Rees

CS FIRS Laboratories, RSR Ltd., Cardiff, CF4 5DU, UK

SO J. Clin. Endocrinol. Metab. (1999) 84(10), 3797-3802

CODEN: JCEMAZ; ISSN: 0021-972X

PB Endocrine Society

DT Journal

LA English

CC 15-3 (Immunochimistry)

Section cross-reference(s): 2, 14

AB Detergent-solubilized \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\*

(TSHR) has been labeled with 125I using a monoclonal antibody to the C-terminal domain of the receptor. The ability of sera contg. TSHR autoantibody to immunoppt. the labeled receptor was then investigated. Sera neg. for TSHR autoantibody (as judged by assays based on inhibition of labeled TSH binding to detergent-solubilized porcine TSHR) immunopptd. about 4% of the labeled receptor, whereas sera with high levels of receptor autoantibody immunopptd. more than 25% of the labeled receptor. The ability to immunoppt. labeled TSHR correlated well with ability of the sera to inhibit labeled TSH binding to the receptor ( $r = 0.92$ ;  $n = 63$ ), and this is consistent with TSHR autoantibodies in these samples being directed principally to a region of the receptor closely related to the TSH binding site. Preincubation of labeled TSHR with unlabeled TSH before reaction with test sera inhibited the immunopptn. reaction, providing further evidence for a close relationship between the TSHR autoantibody binding site(s) and the TSH binding site. This was the case whether the sera had TSH agonist (i.e., thyroid stimulating) or TSH antagonist (i.e., blocking) activities, thus, providing no clear evidence for different regions of the TSHR being involved in forming the binding site(s) for TSHR autoantibodies with stimulating and with blocking activities. The ability of TSHR autoantibodies to stimulate CAMP prodn. in isolated porcine thyroid cells was compared with their ability to immunoppt. labeled porcine TSHR. A significant correlation was obsd. ( $r = 0.58$ ;  $n = 50$ ;  $P < 0.001$ ) and the correlation was improved when stimulation of CAMP prodn. was compared with inhibition of labeled TSH binding to porcine TSHR ( $r = 0.76$ ). Overall, the authors' results indicate that TSHR autoantibodies bind principally to a region on the TSHR closely related to the TSH binding site, and this seems to be the case whether the autoantibodies act as TSH agonists or antagonists.

ST TSH receptor autoantibody ligand binding site

IT Blood serum

Graves' disease

(TSH receptor autoantibodies bind principally to region on TSH receptor closely related to TSH binding site in various human sera)

IT Thyrotropin receptors

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)

(TSH receptor autoantibodies bind principally to region on TSH receptor closely related to TSH binding site in various human sera)

IT Antibodies

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)

(autoantibodies, monoclonal; TSH receptor autoantibodies bind principally to region on TSH receptor closely related to TSH binding site in various human sera)

IT Thyroid gland, disease

(autoimmune thyroiditis; TSH receptor autoantibodies bind principally to region on TSH receptor closely related to TSH binding site in various human sera)

IT Protein motifs  
(ligand binding site; TSH receptor autoantibodies bind principally to region on TSH receptor closely related to TSH binding site in various human sera)

IT Lupus erythematosus  
(systemic; TSH receptor autoantibodies bind principally to region on TSH receptor closely related to TSH binding site in various human sera)

IT 9002-71-5, TSH  
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)  
(TSH receptor autoantibodies bind principally to region on TSH receptor closely related to TSH binding site in various human sera)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Almaula, N; J Biol Chem 1996, V271, P14672 CA
- (2) Asahi, K; Clin Endocrinol Jpn (Hormone to Rynsho) 1996, V44, P401
- (3) Costagliola, S; J Clin Endocrinol Metab 1999, V84, P90 CA
- (4) Davies, T; J Clin Endocrinol Metab 1998, V83, P3777 CA
- (5) Hashim, F; Clin Endocrinol 1986, V25, P275 MEDLINE
- (6) Hoyer, D; Trends Pharmacol Sci 1993, V14, P270 CA
- (7) Kasagi, K; J Clin Endocrinol Metab 1982, V54, P108 CA
- (8) Neve, K; Biochem Soc Trans 1995, V23, P112 CA
- (9) Oda, Y; J Mol Endocrinol 1998, V20, P233 CA
- (10) Prentice, L; J Clin Endocrinol Metab 1997, V82, P1288 CA
- (11) Rapoport, B; Endocr Rev 1999, V19, P673
- (12) Rees Smith, B; Endocr Rev 1988, V9, P106 MEDLINE
- (13) Sanders, J; Bailliere's Clin Endocrinol Metab 1997, V11, P451 MEDLINE
- (14) Southgate, K; Clin Endocrinol 1984, V20, P539 CA
- (15) Strange, P; Trends Pharmacol Sci 1996, V17, P238 CA
- (16) Worthington, J; Clin Endocrinol 1991, V34, P147 MEDLINE
- (17) Wortsman, J; J Clin Endocrinol Metab 1998, V83, P2302 CA

=> d l1 2-19 all

L1 ANSWER 2 OF 19 CA COPYRIGHT 2002 ACS

AN 129:184445 CA

TI Effect of solubilization of porcine thyrotropin (TSH) receptor on TSH binding and on radio-receptor assay for anti-TSH receptor antibodies

AU Watanabe, Yukihiko; Tada, Hisato; Hidaka, Yoh; Takano, Toru; Amino, Nobuyuki

CS Department of Laboratory Medicine, Osaka University Medical School, Suita, 565-0871, Japan

SO Biochem. Biophys. Res. Commun. (1998), 248(1), 110-114  
CODEN: BBRC99; ISSN: 0006-291X

PB Academic Press

DT Journal

LA English

CC 2-5 (Mammalian Hormones)

AB The effect of solubilization of \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* (TSHR) on TSH binding and on the radio-receptor assay for anti-TSHR antibodies was examd. After TSHR solubilization with 1% dodecylpolyethyleneglycoether, TSH binding affinity was increased, from  $K_d = 1.15\text{nM}$  to  $0.45\text{nM}$ , and TSH binding capacity was slightly increased, from  $0.15\text{nM}$  to  $0.19\text{nM}$ . With a particulate membrane suspension from thyroid cells, blocking of TSH binding to the membrane suspension by anti-TSH receptor antibody was obsd. only for thyroid stimulation blocking antibody (TSBAb), not for thyroid-stimulating antibody (TSAb). After the solubilization of TSHR, both TSBAb and TSAb blocked TSH-binding to the solubilized TSHR. The authors speculate that TSAb interacts with the TSHR in the native conformation without interfering with TSH binding, and that after the solubilization, any anti-TSHR antibody interferes with TSH-binding due to the conformational change in TSHR. With these particulate thyroid cell membrane preps., the authors can detect only TSBAb by the radio-receptor assay. (c) 1998 Academic Press.

ST TSH receptor binding solubilization antibody

IT Immunoglobulins  
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(TSH binding-inhibiting; effect of solubilization of \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* on TSH binding and on radio-receptor assay for anti-TSH receptor antibodies)

IT Solubilization  
(effect of solubilization of \*\*\*porcine\*\*\* \*\*\*TSH\*\*\*

\*\*\*receptor\*\*\* on TSH binding and on radio-receptor assay for  
anti-TSH receptor antibodies)  
IT Thyrotropin receptors  
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(effect of solubilization of \*\*\*porcine\*\*\* \*\*\*TSH\*\*\*  
\*\*\*receptor\*\*\* on TSH binding and on radio-receptor assay for  
anti-TSH receptor antibodies)  
IT 9002-71-5, Thyrotropin  
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(effect of solubilization of \*\*\*porcine\*\*\* \*\*\*TSH\*\*\*  
\*\*\*receptor\*\*\* on TSH binding and on radio-receptor assay for  
anti-TSH receptor antibodies)

L1 ANSWER 3 OF 19 CA COPYRIGHT 2002 ACS

AN 129:53347 CA

TI Receptor binding assay for detection of TSH-receptor antibodies as well as  
reagents for its execution

IN Bergmann, Andreas; Struck, Joachim

PA B.R.A.H.M.S Diagnostica G.m.b.H., Germany

SO Ger. Offen., 12 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM G01N033-543

ICS G01N033-78; G01N033-68

CC 15-1 (Immunochemistry)

Section cross-reference(s): 2, 14

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19651093	A1	19980610	DE 1996-19651093	19961209
	DE 19651093	C2	19990610		
	WO 9826294	A1	19980618	WO 1997-EP6767	19971203
	W: JP, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 943098	A1	19990922	EP 1997-952034	19971203
	R: AT, BE, CH, DE, FR, IT, LI				
	JP 2001505999	T2	20010508	JP 1998-526179	19971203
PRAI	DE 1996-19651093	A	19961209		
	WO 1997-EP6767	W	19971203		

AB. The invention concerns a competitive immunoassay for the improved  
diagnosis of Morbus Basedow by detecting TSH-receptor autoantibodies from  
human serum. The method includes parts of the known TRAK Assay. The  
analyte TSH-receptor antibodies are competing for the TSH-receptor with  
labeled TSH primary competitor and with a secondary competitor, that  
consists of an antibody against a peptide fraction of the TSH-receptor.  
The peptide fraction is typical for Morbus Basedow and the usage of the  
monoclonal antibody against it improves the sensitivity of the assay. The  
TSH-receptor is of human, animal or recombinant origin, the competing  
assay is carried out on a solid surface, that are particles, small tubes,  
microtiter plates from glass or plastic. Thus monoclonal antibody was  
raised against the peptide comprising the amino acid sequence 20-29 of the  
human TSH-receptor, the antibody was immobilized onto Carbolink Gel and  
filled into a column. Test soln., \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* -  
\*\*\*receptor\*\*\*, radioactive iodine labeled TSH were mixed, incubated and  
loaded onto the column contg. the secondary competitor bound to the solid  
phase. After rinsing the column the radioactivity of the column was  
measured. For calcns. a std. curve was established as given for the com.  
available TRAK-Assay.

ST TSH receptor autoantibody detn competitive immunoassay; Morbus Basedow TSH  
receptor autoantibody RIA; Graves disease diagnosis TRAK assay

IT Blood analysis  
Graves' disease  
Immobilization (animal)  
RIA (radioimmunoassay)  
Serum (blood)

(competitive RIA for the detection of TSH-receptor autoantibodies in  
Morbus Basedow disease)

IT Autoantibodies  
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical  
study); BIOL (Biological study)  
(competitive RIA for the detection of TSH-receptor autoantibodies in  
Morbus Basedow disease)

IT Thyrotropin receptors  
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);  
ANST (Analytical study); BIOL (Biological study); USES (Uses)  
(competitive RIA for the detection of TSH-receptor autoantibodies in

IT Morbus Basedow disease)  
 Monoclonal antibodies  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (competitive RIA for the detection of TSH-receptor autoantibodies in  
 Morbus Basedow disease)  
 IT Immunoassay  
 (competitive; competitive RIA for the detection of TSH-receptor  
 autoantibodies in Morbus Basedow disease)  
 IT 129290-72-8, Carbolink Gel 145848-98-2  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (competitive RIA for the detection of TSH-receptor autoantibodies in  
 Morbus Basedow disease)

LI ANSWER 4 OF 19 CA COPYRIGHT 2002 ACS  
 AN 128:57761 CA  
 TI Human thyrotropin receptor compositions and use thereof  
 IN Rapoport, Basil; McLachlan, Sandra  
 PA Rapoport, Basil, USA; McLachlan, Sandra  
 SO PCT Int. Appl., 152 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM A61K  
 CC 2-1 (Mammalian Hormones)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9746206	A2	19971211	WO 1997-US9624	19970605
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2258720	AA	19971211	CA 1997-2258720	19970605
	AU 9733762	A1	19980105	AU 1997-33762	19970605
	EP 959896	A2	19991201	EP 1997-929783	19970605
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2000512280	T2	20000919	JP 1998-500809	19970605
PRAI	US 1996-19171	P	19960605		
	WO 1997-US9624	W	19970605		

AB TSH receptor compns. and methods of use are disclosed, useful for  
 diagnostic and therapeutic purposes. Thus, human TSH receptor can be used  
 in a TSH binding inhibition (TBI) assay for TSH receptor autoantibodies.  
 The efficacy of the solubilized human and \*\*\*porcine\*\*\* \*\*\*TSH\*\*\*  
 \*\*\*receptor\*\*\* was compared in a TBI assay using sera from 30  
 individuals with known or suspected Graves' disease. Ten of these sera  
 had undetectable TSH receptor autoantibodies when \*\*\*porcine\*\*\*  
 \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* was used. The TBI values obtained when  
 human TSH receptor was used correlated very well with values detd. with  
 TSH receptor (r = 0.954). However, 2 sera that were neg. with  
 \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* antigen were pos. with  
 the human TSH receptor. Therefor, one aspect of the present disclosure is  
the improvement assays for the detection of TSH receptor autoantibodies.  
Two cleavage sites were detected in the human TSH receptor. Evidence is  
 also presented that high level expression of human TSH receptor in CHO  
 cells is assocd. with neg. cooperativity among TSH receptors in terms of  
 their affinity for ligand. Carboxy-terminal truncation of the human TSH  
 receptor ectodomain generates a secreted protein with complex carbohydrate  
 that neutralizes autoantibodies in Graves' disease patients' sera. This  
 antigenically active TSH receptor truncated form is useful for the  
 diagnosis, pathogenesis, and immunotherapy of Graves' disease.  
 ST TSH receptor Graves disease; autoantibody TSH receptor Graves disease  
 IT Graves' disease

(human TSH receptor diagnostic and therapeutic and autoregulatory  
 activity and cleavage sites)  
 IT Thyrotropin receptors  
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological  
 process); THU (Therapeutic use); BIOL (Biological study); PROC (Process);  
 USES (Uses)  
 (human TSH receptor diagnostic and therapeutic and autoregulatory  
 activity and cleavage sites)  
 IT Immunodiagnosis  
 (human TSH receptor immunodiagnostic uses)  
 IT Immunotherapy  
 (human TSH receptor immunotherapeutic uses)  
 IT Blood analysis  
 (human TSH receptor in detn. of TSH receptor autoantibodies)  
 IT Autoantibodies  
 RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL

(Biological study); USES (Uses)  
(to TSH receptor; human TSH receptor diagnostic and therapeutic and  
autoregulatory activity and cleavage sites)  
IT 9002-71-5, Thyrotropin  
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL  
(Biological study); PROC (Process)  
(human TSH receptor diagnostic and therapeutic and autoregulatory  
activity and cleavage sites)

L1 ANSWER 5 OF 19 CA COPYRIGHT 2002 ACS  
AN 122:76067 CA  
TI Competitive binding assay method and its use in determination of serum  
autoantibodies to TSH receptors  
IN Bergmann, Andreas; Struck, Joachim; Kornfeld, Shaul  
PA Henning Berlin GmbH, Germany  
SO Ger., 14 pp.  
CODEN: GWXXAW  
DT Patent  
LA German  
IC ICM G01N033-53  
ICS G01N033-78; C12Q001-00  
CC 9-10 (Biochemical Methods)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4328070	C1	19941124	DE 1993-4328070	19930820
	WO 9506258	A1	19950302	WO 1994-EP2748	19940818
	W: JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 724726	A1	19960807	EP 1994-925460	19940818
	EP 724726	B1	19971105		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	JP 09500215	T2	19970107	JP 1994-507334	19940818
	AT 160023	E	19971115	AT 1994-925460	19940818
	US 5814461	A	19980929	US 1996-596172	19960709
PRAI	DE 1993-4328070		19930820		
	WO 1994-EP2748		19940818		

AB An analyte is detd. in a liq. sample by (a) adding a predetd. amt. of a  
binding partner (B1) for the analyte, (b) adding a predetd. amt. of a  
labeled or labelable competing reagent (K) which also binds to B1, (c)  
simultaneously or subsequently incubating the reaction mixt. with a solid  
phase coated with a 2nd binding partner (B2) for selective immobilization  
of unbound K, (d) quant. sepn. of phases, and (e) detn. of the immobilized  
label on K. This method was applied to detn. of autoantibodies to TSH  
receptors in serum of patients with Graves' disease, using \*\*\*porcine\*\*\*  
\*\*\*TSH\*\*\* \*\*\*receptors\*\*\* as B1, bovine TSH as K, a monoclonal  
antibody to TSH bound to the wall of the assay tube as B2, and a 2nd  
monoclonal antibody to TSH labeled with an acridinium ester as labeling  
reagent for the immobilized TSH.

ST TSH receptor autoantibody competitive binding assay; immunoassay TSH  
receptor autoantibody serum

IT Blood analysis

Immunoassay

(competitive binding assay method and use in detn. of serum  
autoantibodies to TSH receptors)

IT Graves' disease

(diagnosis; competitive binding assay method and use in detn. of serum  
autoantibodies to TSH receptors)

IT Receptors

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(TSH, competitive binding assay method and use in detn. of serum  
autoantibodies to TSH receptors)

IT Antibodies

RL: ANT (Analyte); ANST (Analytical study)  
(auto-, competitive binding assay method and use in detn. of serum  
autoantibodies to TSH receptors)

IT Antibodies

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(monoclonal, to TSH; competitive binding assay method and use in detn.  
of serum autoantibodies to TSH receptors)

IT 9002-71-5, Thyrotropin

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(competitive binding assay method and use in detn. of serum  
autoantibodies to TSH receptors)

L1 ANSWER 6 OF 19 CA COPYRIGHT 2002 ACS  
AN 118:73911 CA

TI Molecular cloning of a cDNA fragment for porcine thyrotropin receptor  
AU Shi, Yufei; Zou, Mingji; Farid, Nadir R.; Berbue, Dominique  
CS Health Sci. Cent., Mem. Univ. Newfoundland, St. John's, NF, Can.  
SO Prog. Thyroid Res., Proc. Int. Thyroid Conf., 10th (1991), 99-102.  
Editor(s): Gordon, Amirav; Gross, Jack; Hennemann, Georg. Publisher:  
Balkema, Rotterdam, Neth.  
CODEN: 58JYAY  
DT Conference  
LA English  
CC 2-5 (Mammalian Hormones)  
Section cross-reference(s): 3  
AB A 500-bp transmembrane region of \*\*\*porcine\*\*\* \*\*\*TSH\*\*\*  
\*\*\*receptor\*\*\* cDNA was cloned and used to det. the gene copy no. as  
well as human chromosomal location of the gene.  
ST TSH receptor cDNA cloning  
IT Molecular cloning  
(of TSH receptor cDNA)  
IT Receptors  
RL: BIOL (Biological study)  
(TSH, cDNA for, mol. cloning of)  
IT Deoxyribonucleic acid sequences  
(complementary, for TSH receptor)  
IT 9002-71-5, TSH  
RL: BIOL (Biological study)  
(receptor for, cDNA for, mol. cloning of)

L1 ANSWER 7 OF 19 CA COPYRIGHT 2002 ACS  
AN 114:56045 CA  
TI Biological activity and metabolic clearance of a recombinant human  
thyrotropin produced in Chinese hamster ovary cells  
AU Thotakura, N. Rao; Desai, Rajesh K.; Bates, Lisa G.; Cole, Edward S.;  
Pratt, Bruce M.; Weintraub, Bruce D.  
CS Mol., Cell. Nutr. Endocrinol. Branch, Natl. Inst. Diabetes Dig. Kidney  
Dis., Bethesda, MD, 20892 USA  
SO Endocrinology (Baltimore) (1991), 128(1), 341-8 182 - QP187. A1 JF  
CODEN: ENDOAO; ISSN: 0013-7227

DT Journal  
LA English  
CC 2-5 (Mammalian Hormones)  
AB The presence and specific structures of the oligosaccharides on TSH have  
been shown to be important for its prodn. and bioactivity. Since the  
carbohydrate structure of a protein reflects the glycosylation app. of the  
host cells in which the protein is expressed, the biol. activity and  
metabolic clearance of a prepn. of purified recombinant human (rh) TSH  
derived from a stable transfectant of Chinese hamster ovary cells were  
examd. Carbohydrate compositional anal. of this rTSH showed it to be more  
highly sialylated than a nonrecombinant, cadaver-derived pituitary hTSH.  
In addn., no N-acetyl galactosamine was detectable in rhTSH, which implies  
the absence of terminal sulfate moieties, both of which are present in  
pituitary-derived TSH. The immunol. activity and \*\*\*porcine\*\*\*  
\*\*\*TSH\*\*\* \*\*\*receptor\*\*\* -binding activity of the prepn. of rhTSH  
were 3-4-fold lower than those of a std. pituitary hTSH. The rhTSH showed  
a max. stimulatory activity similar to that of pituitary hTSH in 2  
different in vitro bioassays. However, rhTSH elicited about 3-fold and  
5-fold less CAMP than pituitary TSH after stimulation of adenylyl cyclase  
in bovine thyroid membranes and the rat FRTL-5 cell line, resp. Removal  
of sialic acid did not alter the immunol. activity of rhTSH. However, the  
potencies of rhTSH in receptor-binding, adenylyl cyclase, and FRTL-5  
assays were increased 2.4-, 2.6-, and 26.7-fold, resp. after sialic acid  
removal. These data suggest that the in vitro biol. activity of rhTSH is  
influenced by its highly sialylated oligosaccharide chains. The rhTSH had  
a 2-fold lower metabolic clearance rate than pituitary TSH, resulting in a  
greater than 10-fold higher serum concn. of rhTSH at 3 h as compared to  
pituitary hTSH. After sialic acid removal, the rhTSH was cleared faster  
(7.5-fold) than pituitary hTSH, showing that its longer plasma half-life  
was due to its higher sialylation. Biol. active rhTSH should be of clin.  
value in the diagnosis and treatment of patients with thyroid cancer and  
as a pure hTSH ref. prepn.  
ST TSH sialic acid bioactivity metab  
IT Sialic acids  
RL: BIOL (Biological study)  
(of TSH, recombinant human, bioactivity and metabolic clearance rate in  
CHO cells in relation to)  
IT 9002-71-5, TSH  
RL: BIOL (Biological study)  
(bioactivity and metabolic clearance rate of recombinant human, in CHO  
cells, sialic acid content in relation to)

L1 ANSWER 8 OF 19 CA COPYRIGHT 2002 ACS  
AN 111:129334 CA  
TI Lutropin receptor and thyrotropin receptor share a common epitope  
AU Bedin, C.; Antonicelli, F.; Jallal, B.; Salesse, R.; Bidart, J. M.; Remy, J. J.  
CS Hopital Cochin, Paris, 75674, Fr.  
SO Mol. Cell. Endocrinol. (1989), 65(1-2), 135-44  
CODEN: MCEND6; ISSN: 0303-7207  
DT Journal  
LA English  
CC 6-3 (General Biochemistry)  
AB The existence of common epitopes between 2 receptors of the glycoprotein hormone family, LH and TSH receptors, was investigated by an immunol. approach. High responder mice were immunized with purified porcine LH receptors obtained by successive affinity chromatogs. on agarose-human chorionic gonadotropin (hCG) gels. From 1 fusion of splenocytes with the murine myeloma NSC1, secreting hybridomas were tested for their anti-LH receptor specificities. During sequential selection for this activity including direct recognition of the purified LH receptors in dot-blot assays and displacement expts. of 125I-labeled pLH and 125I-labeled hCG binding to different sources of receptors, a parallel investigation of their anti- \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* activities was performed. Purified Igs from 2 of them showed a TSH-like activity on the iodide metab. of porcine thyroid cells, this activity being related to the phosphoinositide breakdown pathway; moreover, these antibodies obtained after immunization with porcine LH receptors were able to immunopurify human TSH receptors. The double selection process led to the characterization of 3 groups of Igs: exclusive specificities for lutropin receptors or TSH receptors and cross-reactive specificities. The results demonstrate the possibility of sequence homologies at the protein and the gene levels between the receptors for the glycoprotein hormone family supporting the hypothesis of a common origin in evolution.  
ST receptor LH TSH common epitope  
IT Receptors

RL: BIOL (Biological study)  
(for LH and TSH, common epitope of)  
IT 9002-71-5, TSH  
RL: BIOL (Biological study)  
(receptors for, LH receptor common epitope with)  
IT 9002-67-9, LH  
RL: BIOL (Biological study)  
(receptors for, TSH receptor common epitope with)

L1 ANSWER 9 OF 19 CA COPYRIGHT 2002 ACS  
AN 108:69416 CA  
TI About the \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\*  
AU Farid, Nadir R.; Fahraeus-Van Ree, Goverdina  
CS Thyroid Res. Lab., Health Sci. Cent., St. John's, NF, A1B 3V6, Can.  
SO Acta Endocrinol. (Copenhagen), Suppl. (1987), 115(281), 181-5  
CODEN: ACEDAB; ISSN: 0300-9750

DT Journal  
LA English  
CC 2-7 (Mammalian Hormones)  
AB Using a no. of immunol. and biochem. approaches, a no. of [125I]bTSH binding peptides with Mr .apprx.45,000, 66,000-70,000, .apprx.95,000 were identified; larger conjugates capable of binding the hormone have not been excluded. A conservative interpretation of the data suggest a basic receptor unit of Mr .apprx.95,000 of which Mr 45,000 and 66,000-70,000 are proteolytic products of membrane-bound proteases. The assocn. of 2 intact subunits by strong noncovalent forces may generate >3 TSH binding sites.  
ST thyroid hormone receptor binding protein  
IT Thyroid gland, composition  
(TSH-binding peptides of cell nuclei of)  
IT Proteins, specific or class  
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)  
(TSH-binding, of thyroid gland)  
IT 9002-71-5, TSH  
RL: BIOL (Biological study)  
(receptors of, of thyroid nucleus, binding peptides in relation to)

L1 ANSWER 10 OF 19 CA COPYRIGHT 2002 ACS  
AN 106:832 CA  
TI Assessment of the shape and molecular size of TSH-TSH receptor complexes  
AU Furmaniak, J.; Jones, E. Davies; Buckland, P. R.; Howells, R. D.; Smith,

B. Rees  
 Coll. Med., Univ. Wales, Cardiff, CF4 4XN, UK  
 Mol. Cell. Endocrinol. (1986), 48(1), 31-8  
 CODEN: MCEND6; ISSN: 0303-7207  
 Journal  
 English  
 2-5 (Mammalian Hormones)  
 Section cross-reference(s): 6  
 Photoaffinity labeling and anal. under denaturing conditions (SDS-PAGE) have shown that the \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* contains an A subunit (mol. wt. (Mr) = 47,000) which forms the binding site for TSH and a B subunit (Mr = 25,000) linked to the A subunit by a SS bridge. To assess the size and shape of the receptor under non-denaturing conditions, photoaffinity-labeled \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptors\*\*\* were solubilized with the small micelle-sized detergent Na deoxycholate and the preps. were analyzed by sucrose-d. gradient centrifugation and gel filtration. Under these conditions, the cross-linked TSH-TSH receptor complex showed a sedimentation value of 6.4 S and a frictional ratio (f/f<sub>0</sub>) of 1.8. These values were consistent with those which might be expected from an elongated protein complex with a mol. wt. of approx. 100,000 (the value obtained by SDS-PAGE). Anal. of another thyroid membrane protein, human thyroid microsomal antigen (Mr = 110,000 by SDS-PAGE) under the same conditions gave a sedimentation value of 6.0 S and f/f<sub>0</sub> = 1.3, which suggests that this protein has a compact structure. The TSH receptor A subunit cross-linked to TSH (Mr = 70,000 by SDS-PAGE) gave a sedimentation value of 4.6 S and f/f<sub>0</sub> = 1.8, and these values could be compared with those obtained for the A subunit alone (3.6 S; f/f<sub>0</sub> = 1.4; Mr by SDS-PAGE = 47,000) and TSH alone (2.6 S; f/f<sub>0</sub> = 1.6; Mr = 28,000). Thus, when TSH (which has an elongated structure) combines with the TSH receptor A subunit (which has a compact structure), the 2 proteins do not fold into each other extensively but form a structure with an even greater degree of elongation.  
 TSH receptor complex size shape  
 Receptors  
 RL: BIOL (Biological study)  
 (for thyrotropin, mol. size and shape of)  
 9002-71-5D, TSH, receptor complexes  
 RL: BIOL (Biological study)  
 (mol. size and shape of)  
 ANSWER 11 OF 19 CA COPYRIGHT 2002 ACS  
 105:112803 CA  
 TSH receptor antibody induction of thyroglobulin release from human thyroid cell monolayers  
 Feldman, A.; Schwartz, A. E.; Friedman, E. W.; Davies, T. F.  
 Dep. Med., Mount Sinai Sch. Med., New York, NY, 10029, USA  
 Clin. Endocrinol. (Oxford) (1986), 25(1), 45-53  
 CODEN: CLECAP; ISSN: 0300-0664  
 Journal  
 English  
 13-6 (Mammalian Biochemistry)  
 Section cross-reference(s): 2, 14  
 The influence of TSH receptor antibody (TRA), as detected by inhibition of 125I-bovine(b) TSH binding to detergent solubilized \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptors\*\*\*, on in vitro human thyroglobulin (hTg) prodn. was examd. using normal thyroid cells in monolayer. Secretion of hTg into the culture medium was analyzed by a noncompetitive ELISA technique utilizing 2 murine monoclonal antibodies. Basal hTg release [124 ng/105 cells/6 day(d)] was stimulated by bTSH (10, 102, 103 .mu.unit/mL) in a dose-related manner (191, 587, 695 ng/105 cells/6 d, resp.). IgG (2 mg/mL) from patients with hyperthyroid Graves' disease, and known titers of TRA, similarly enhanced prodn. of hTg, in a dose and time-dependent manner when compared with control IgG. The degree of induction varied, with 140-230% increases in total hTg release over a 6-d incubation. There was a direct correlation between the degree of 125I-bTSH binding inhibitory activity and the hTg response. Thus, TSH receptor antibodies enhance hTg release from human thyroid cell monolayers and allow an assessment to be made of antibody-activated post receptor mechanisms.  
 TSH receptor antibody thyroglobulin thyroid; Graves disease TSH receptor antibody; Ig Graves disease thyroglobulin prodn  
 Graves' disease  
 (Igs from, thyroglobulin prodn. by thyroid cells from human stimulation by)  
 Receptors  
 RL: BIOL (Biological study)  
 (for thyrotropin, antibodies to, thyroglobulin prodn. by thyroid cells



of human stimulation by)  
 IT Thyroglobulins  
 RL: FORM (Formation, nonpreparative)  
 (formation of, by thyroid cell culture from human, thyrotropin receptor  
 antibody stimulation of)  
 IT Thyroid gland, metabolism  
 (thyroglobulin prodn. by cell culture from human, TSH receptor  
 antibodies stimulation of)  
 IT Antibodies  
 RL: BIOL (Biological study)  
 (to TSH receptor, thyroglobulin release from human thyroid cell  
 cultures induction by)  
 IT Immunoglobulins  
 RL: BIOL (Biological study)  
 (G, from Graves' disease patients, thyroglobulin prodn. by thyroid  
 cells of humans stimulation by)  
 IT 9002-71-5  
 RL: BIOL (Biological study)  
 (receptors for, antibodies to, thyroglobulin prodn. by thyroid cells of  
 human stimulation by)

L1 ANSWER 12 OF 19 CA COPYRIGHT 2002 ACS

AN 102:215647 CA

TI Immunoprecipitation of TSH-TSH receptor complexes

AU Parkes, A. B.; Kajita, Y.; Buckland, P. R.; Howells, R. D.; Rickards,  
 Carole R.; Creagh, Fionuala M.; Rees Smith, B.

CS Coll. Med., Univ. Wales, Cardiff, CF4 4XN, UK

SO Clin. Endocrinol. (Oxford) (1985), 22(4), 511-20

CODEN: CLECAP; ISSN: 0300-0664

DT Journal

LA English

CC 2-5 (Mammalian Hormones)

Section cross-reference(s): 14

AB The ability of Graves' sera to interact with the TSH receptor crosslinked  
 to a <sup>125</sup>I-labeled photoactive deriv. of TSH was investigated. Crosslinked  
 complexes were prepd. using nonpurified detergent-solubilized human  
 thyroid and guinea pig fat TSH receptors. Affinity-purified

\*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* preps. were also used.  
 After crosslinking, the crosslinked TSH-TSH receptor complexes were sepd.  
 from aggregates and free TSH on Sephacryl S-300 and incubated with test  
 sera followed by immunopptn. using anti-IgG or Protein A. Using  
 nonpurified human TSH receptors crosslinked to TSH, a mean of 12.1% of the  
 crosslinked complex was immunopptd. with Graves' sera compared with 10.3  
 with Hashimoto sera and 3.8% with normal sera. These values were markedly  
 reduced when TSH receptor preps. free of other thyroid autoantigens  
 (guinea pig fat TSH receptors) were used. Under these conditions  
 immunopptn. with Graves' sera was 1.6% compared with 0.8% for Hashimoto  
 sera and 0.8% for normal sera. Addn. complexes formed between TSH and  
 affinity-purified \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptors\*\*\* gave  
 low immunopptn. values for Graves' (1.44%) and Hashimoto sera (1.7%) which  
 were not significantly different. Overall, therefore, the effects of  
 Graves' and Hashimoto sera were similar and the amts. of material  
 immunopptd. were markedly reduced when TSH receptor preps. contg. reduced  
 amts. of other autoantigens were used. Consequently, the Graves' sera did  
 not appear to interact specifically with crosslinked TSH-TSH receptor  
 complexes. However, the Graves' sera did contain TSH receptor antibodies  
 which could inhibit the binding of labeled TSH to TSH receptors in the  
 preps. used and these results suggest that the binding of TSH and these  
 antibodies to the receptor is mutually exclusive.

ST TSH binding receptor antibody Graves

IT Receptors

RL: BIOL (Biological study)  
 (TSH complexes, antibodies of blood serum in Graves disease interaction  
 with, of human and lab. animals)

IT Graves' disease  
 (antibodies of blood serum in, TSH-receptor complexes of human and lab.  
 animals interaction with)

IT Thyroid gland, disease or disorder  
 (Hashimoto's, antibodies of blood serum in, TSH-receptor complexes of  
 human and lab. animals interaction with)

IT 9002-71-5D, receptor complexes

RL: BIOL (Biological study)  
 (antibodies of blood serum in Graves disease interaction with, of human  
 and lab. animals)

L1 ANSWER 13 OF 19 CA COPYRIGHT 2002 ACS

AN 102:143331 CA

TI A structure for the \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\*  
 AU Kajita, Yoshihiro; Rickards, Carole R.; Buckland, Paul R.; Howells, Roger  
 D.; Smith, Bernard Rees  
 CS Coll. Med., Univ. Wales, Cardiff, CF4 4XN, UK  
 SO FEBS Lett. (1985), 181(2), 218-22  
 CODEN: FEBLAL; ISSN: 0014-5793  
 DT Journal  
 LA English  
 CC 2-2 (Mammalian Hormones)  
 Section cross-reference(s): 6  
 AB Affinity purified, detergent-solubilized porcine thyroid gland TSH  
 [9002-71-5] receptors were crosslinked to a 125I-labeled photoactive  
 deriv. of TSH and analyzed by gel electrophoresis, gel filtration, and  
 sucrose d. gradient centrifugation. Apparently, \*\*\*porcine\*\*\*  
 \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* is made up of a hydrophilic A subunit with  
 a mol. wt. (Mr) of .apprx.45,000 linked to an amphiphilic B subunit (Mr  
 .apprx.25,000) by a disulfide bridge(s). The A subunit forms the binding  
 site for TSH on the outside of the cell membrane. The B subunit appears  
 to penetrate the membrane and form the site for interaction with adenylate  
 cyclase [9012-42-4] either in the lipid bilayer or close to the  
 cytoplasmic surface of the membrane.  
 ST TSH receptor structure; thyroid TSH receptor structure; adenylate cyclase  
 TSH receptor structure  
 IT Cell membrane  
 (TSH receptors of, of thyroid gland, structure of)  
 IT Thyroid gland, composition  
 (TSH receptors of, structure of)  
 IT Receptors  
 RL: BIOL (Biological study)  
 (for TSH, of thyroid gland, structure of)  
 IT Conformation and Conformers  
 (of TSH receptor, of thyroid gland)  
 IT 9012-42-4  
 RL: BIOL (Biological study)  
 (TSH receptor conformation in thyroid gland in relation to)  
 IT 9002-71-5  
 RL: BIOL (Biological study)  
 (receptors for, structure of)  
 IT 9002-71-5D, receptor complexes  
 RL: PRP (Properties)  
 (structure of, of thyroid gland cell membranes)  
 L1 ANSWER 14 OF 19 CA COPYRIGHT 2002 ACS  
 AN 102:125884 CA  
 TI Affinity-labeling of the thyrotropin receptor. Characterization of the  
 photoactive ligand  
 AU Buckland, Paul R.; Howells, Roger D.; Rickards, Carole R.; Rees Smith,  
 Bernard  
 CS Endocrine Immunol. Unit, Welsh Natl. Sch. Med., Cardiff, CF4 4XN, UK  
 SO Biochem. J. (1985), 225(3), 753-60  
 CODEN: BIJOAK; ISSN: 0306-3275  
 DT Journal  
 LA English  
 CC 2-5 (Mammalian Hormones)  
 Section cross-reference(s): 6, 9  
 AB TSH was coupled to the photoactive heterobifunctional reagent  
 N-hydroxysuccinimidyl 4-azidobenzoate (HSAB) and the properties of the  
 product (HSAB-TSH) investigated. Preps. of HSAB-TSH contg. 2 mols. of  
 HSAB per mol. of TSH were used in most expts. and these preps. retained  
 .apprx.40% of the original receptor-binding activity of the TSH. HSAB-TSH  
 could be labeled with 125I and crosslinked to porcine and human TSH  
 receptors. Anal. of the crosslinked complexes indicated that the  
 receptors consisted of 2 subunits (designated A and B) linked by a  
 disulfide bridge. In the case of the human TSH receptor, the A- and  
 B-subunits had approx. mol. wt. (Mr) values of 50,000 and 30,000, resp.,  
 whereas the Mr values for \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* - \*\*\*receptor\*\*\*  
 A- and B-subunits were .apprx.45,000 and 25,000, resp. Only the A subunit  
 was crosslinked to TSH. Comparison suggested that the trypsin cleavage  
 point on the A-subunit was at a point close to the disulfide bridge.  
 ST TSH receptor characterization; hydroxysuccinimidyl azidobenzoate TSH  
 receptor  
 IT Receptors  
 RL: BIOL (Biological study)  
 (for TSH, characterization of, hydroxysuccinimidylazidobenzoate-TSH  
 affinity labeling in relation to)  
 IT 9002-71-5D, reaction products with hydroxysuccinimidylazidobenzoate  
 53053-08-0d, reaction products with TSH

RL: BIOL (Biological study)  
(TSH receptor affinity labeling with, characterization in relation to)

L1 ANSWER 15 OF 19 CA COPYRIGHT 2002 ACS  
AN 101:921 CA  
TI A receptor assay for the measurement of TSH receptor antibodies in unextracted serum  
AU Southgate, Kay; Creagh, Fionuala; Teece, Michelle; Kingswood, C.; Smith, B. Rees  
CS Dep. Med., Welsh Natl. Sch. Med., Cardiff, CF4 4XN, UK  
SO Clin. Endocrinol. (Oxford) (1984), 20(5), 539-48  
CODEN: CLECAP; ISSN: 0300-0664  
DT Journal  
LA English  
CC 2-1 (Mammalian Hormones)  
Section cross-reference(s): 14  
AB A receptor assay for TSH [9002-71-5] receptor antibodies is described in which unextd. serum, detergent solubilized TSH receptors, and 125I-labeled TSH are used. The assay was rapid and reproducible with relative std. deviations of 12.3, 2.1, and 2.6% at mean inhibition of TSH binding values of 11, 53, and 79 resp. Assay sensitivity was increased by reducing the vol. of receptors used but some increase in the scatter of values obtained with individual normal sera was also obsd. Comparison of human and \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* preps. indicated that porcine tissue gave greater sensitivity. Anal. of different groups of patients and normal subjects showed the absence of detectable TSH receptor antibody activity in patients with rheumatoid arthritis, with multinodular goiter, and with Hashimoto's disease. However, the antibody was readily detectable in Graves' patients (treated and untreated) who were hyperthyroid at the time of assay.  
ST serum TSH receptor antibody detn; Graves disease TSH receptor antibody  
IT Blood analysis  
(TSH receptor antibodies detn. in human, by receptor assay)  
IT Graves' disease  
(TSH receptor antibodies of blood serum in, in humans)  
IT Receptors  
RL: BIOL (Biological study)  
(for TSH, antibodies to, detn. of, in blood serum of humans by receptor assay)  
IT Antibodies  
RL: PROC (Process)  
(to TSH receptor, detn. of, in blood serum of humans by receptor assay)  
IT 9002-71-5  
RL: BIOL (Biological study)  
(receptors for, antibodies to, detn. of, in blood serum of humans by receptor assay)

L1 ANSWER 16 OF 19 CA COPYRIGHT 2002 ACS  
AN 100:48020 CA  
TI Molecular-weight determinations of the thyrotropin receptor by affinity labeling  
AU Buckland, P. R.; Rickards, Carole R.; Howells, R. D.; Davies Jones, Eirian; Rees Smith, B.  
CS Dep. Med., Welsh Natl. Sch. Med., Cardiff, CF4 4XN, UK  
SO Biochem. Soc. Trans. (1983), 11(2), 189-90  
CODEN: BCSTB5; ISSN: 0300-5127  
DT Journal  
LA English  
CC 9-8 (Biochemical Methods)  
Section cross-reference(s): 2  
AB By using the photoreactive bifunctional reagent N-hydroxysuccinimide 4-azidobenzoate to crosslink 125I-linked TSH to its receptor protein, it was found that TSH receptors in human and porcine thyroid and guinea pig fat probably contain a similar basic unit which binds one mol. of TSH. Variations in the size of the receptor were obsd. between species and a model is presented for the basic unit of the \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\*. The receptor may also contain addnl. components noncovalently linked to the basic unit.  
ST TSH receptor affinity labeling  
IT Receptors  
RL: ANST (Analytical study)  
(for TSH, affinity labeling of, mol. wt. in relation to)  
IT 9002-71-5  
RL: ANST (Analytical study)  
(receptor for, affinity labeling of, mol. wt. in relation to)

L1 ANSWER 17 OF 19 CA COPYRIGHT 2002 ACS

AN 96:193786 CA  
 TI Evidence that the porcine thyrotropin (TSH) receptor contains an essential disulfide bridge  
 AU Ginsberg, Jody; Rees Smith, Bernard; Hall, Reginald  
 CS Dep. Med., Welsh Natl. Sch. Med., Cardiff, CF4 4XN, UK  
 SO Mol. Cell. Endocrinol. (1982), 26(1-2), 95-102  
 CODEN: MCEND6; ISSN: 0303-7207  
 DT Journal  
 LA English  
 CC 2-5 (Mammalian Hormones)  
 AB The effects of reducing agents on membrane-bound and detergent-solubilized porcine TSH [9002-71-5] receptors were investigated. Both 2-mercaptoethanol and dithiothreitol appeared to inhibit the TSH-binding activity by a direct effect on the TSH receptor itself and Scatchard anal. suggested that this was primarily due to an alteration in TSH-binding capacity. In addn., some binding activity could be recovered by reoxidn. of reduced receptor preps. Apparently, the \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* contains an essential disulfide bridge.  
 ST TSH receptor disulfide bridge  
 IT Receptors  
 RL: BIOL (Biological study)  
 (for TSH, disulfide bridges of)  
 IT Bond  
 (sulfur-sulfur, of TSH receptor)  
 IT 9002-71-5  
 RL: BIOL (Biological study)  
 (receptors for, disulfide bridges of)  
 L1 ANSWER 18 OF 19 CA COPYRIGHT 2002 ACS  
 AN 94:77129 CA  
 TI Evidence that the thyrotropin receptor contains at least one essential disulfide bridge  
 AU Ginsberg, J.; Rees Smith, B.; Hall, R.  
 CS Dep. Med., Univ. Wales, Cardiff, CF4 4XN, Wales  
 SO J. Endocrinol. (1980), 87(2), 33P-34P  
 CODEN: JOENAK; ISSN: 0022-0795  
 DT Journal  
 LA English  
 CC 2-1 (Hormone Pharmacology)  
 AB The reducing agents, 2-mercaptoethanol and dithiothreitol, dose-dependently inhibited 125I-labeled TSH [9002-71-5] binding to membrane-bound and detergent-solubilized \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptors\*\*\*. Recovery of TSH binding was obsd. following removal of reducing agent or addn. of H<sub>2</sub>O<sub>2</sub>. Thus, the \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptor\*\*\* contains .gtoreq.1 disulfide bridge which, once reduced, is capable of undergoing partial reoxidn.  
 ST TSH receptor disulfide bridge  
 IT Receptors  
 RL: BIOL (Biological study)  
 (for TSH, disulfide bridges of)  
 IT Disulfide group  
 (of TSH receptor)  
 IT 9002-71-5  
 RL: BIOL (Biological study)  
 (receptor for, disulfide bridges of)  
 L1 ANSWER 19 OF 19 CA COPYRIGHT 2002 ACS  
 AN 89:173982 CA  
 TI Solubilization and partial characterization of human and porcine thyrotropin receptors  
 AU Dawes, P. J. D.; Petersen, V. B.; Rees Smith, B.; Hall, R.  
 CS Dep. Med., Univ. Newcastle upon Tyne, Newcastle upon Tyne, Engl.  
 SO J. Endocrinol. (1978), 78(1), 89-102  
 CODEN: JOENAK; ISSN: 0022-0795  
 DT Journal  
 LA English  
 CC 2-1 (Hormone Pharmacology)  
 AB Triton X-100 was used to solubilize TSH [9002-71-5] receptors from human and pig thyroid membranes and both sets of receptors had a mol. wt. of .apprx.50,000 and were assocd. with Triton micelles of mol. wt. .apprx.300,000. Human TSH receptors were heat labile, showed optimum TSH binding at pH 7.4 and reduced hormone binding at high ionic strength, and had an isoelec. point of pH 4-4.5. The binding characteristics of membrane-bound and solubilized receptors were similar and both gave curved Scatchard plots, unlike the corresponding \*\*\*porcine\*\*\* \*\*\*TSH\*\*\* \*\*\*receptors\*\*\*, which gave linear plots with assocn. consts. of 2.8 .times. 109 and 1.7 .times. 109 L/mol, resp. 125I-labeled TSH apparently

ADONIS

interacts specifically and reversibly with sol. exts. of human and porcine thyroid membranes.

ST TSH receptor thyroid membrane  
IT Thyroid gland  
(TSH receptor of membrane of)  
IT cell membrane  
(TSH receptor of, of thyroid gland)  
IT Receptors  
RL: BIOL (Biological study)  
(for TSH, of thyroid gland membrane)  
IT 9002-71-5  
RL: BIOL (Biological study)  
(receptors for, of thyroid gland membrane)

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